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SCIENTIFIC INVESTIGATIONS,
1911.
No. I.

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(WITH 2 PLATES).

BY

THOMAS SCOTT, LL.D., F.L.S.

This paper may be referred to as:
Fisheries, Scotland, Sci. Invest., 1911, I. (August 1912).

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(*With 2 Plates.*)*

PRELIMINARY NOTE.

The Crustacea described here were obtained in collections made by the Fishery steamer "Goldseeker" while carrying on work in the North Sea and adjacent waters under the direction of Professor d'Arcy W. Thompson, C.B., F.L.S., the representative for Scotland on the International Committee. I am indebted to Professor Thompson for permission to publish these notes.

Hemilamprops normani, Bonnier.

1876. *Hemilamprops normani*, Bonnier, Campagne du "Caudan," Edriophthalmes; Ann. l'Univ. de Lyons, p. 546, Pl. XXXIX., fig. 3.

Several specimens which agree very well with Bonnier's description and figures of *H. normani* were obtained in deep-water gatherings from "Goldseeker" Station 53 (Lat. 59°36 N., Long. 7°0 W.), and others from a gathering collected in Lat. 59°25 N., Long. 7°33 W. The telson is moderately stout, rather shorter than the peduncle of the uropods, and with the lateral margins finely but distinctly serrated throughout; the distal half of the telson is also furnished with about seven pairs of stiff lateral spinules, and with five similar spinules at the apex, the middle one being distinctly longer than the others. The length of the entire specimen was about 8 mm., and therefore rather smaller than the size given by Bonnier.

This species has a resemblence to *H. cristata*, G. O. Sars, which was also not uncommon in the "Goldseeker" collections, but was readily distinguished from it by the difference in the armature of the telson.

Diastylis serricauda, sp. n., ♀, Pl. I., figs. 1–4.

In its general appearance this species resembles *D. longipes*, G. O. Sars. The cephalothorax is moderately elongated and equal to rather more than half the entire length. The cephalon seen from the side appears to be of an oval form, and on the dorsal aspect, especially towards the front, are a number of stiff spinules; the rostrum is narrow and somewhat produced in the median line, and the pleon

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* The drawings for the Plates are chiefly by my son, Mr. A. Scott, A.L.S.

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segments are rough with minute prickles ; so also is the dorsum of the cephalothorax. The telson is tolerably elongated, being about two-and-a-half times the length ot the last pleon segment, and rather longer than the peduncle of the uropods; it is subcylindrical for about two-thirds of its length, and then becomes gradually narrower towards the apex. The lateral margins of the distal portion are distinctly coarsely serrated, and the apex is provided with two moderately stout and somewhat divergent spines. The length of the specimen represented by the drawing (fig. 1) is about 12 mm.

Habitat.—" Goldseeker " Station 53 (Lat. 59°36 N., Long. 7°00 W.), at 140 meters, in August 1907. Rare. Pending the discovery of further specimens, and the determination of its relationship with other species, I have ascribed this form provisionally to *Diastylis ;* its most distinct and obvious peculiarity seems to be the form and armature of the telson.

Diastylopsis (*?*) *dubia,* Bonnier. Pl. I., fig. 5.

1896. *Diastylopsis* (*?*) *dubia,* Bonnier, Campagne du " Caudan," Ann. l'Univer. de Lyon, p. 559, Pl. XXX., fig. 3 a—m.

One or two specimens, apparently identical with the form described under this name by Bonnier, were obtained in gatherings collected at two " Goldseeker " stations, viz , Station 53 (Lat. 59°36 N., Long. 7°00 W.), at 1000 meters, in July, and at 1100 meters in Lat. 59°25 N., Long. 7°33 W. in August 1907. The telson in this species, as in *Dic tubulicauda* (Calman), is unusually elongated; it is cylindrical or nearly so for about three-fifths of its length; the sides then gradually converge towards the apex, which is narrow and carries two small scarcely divergent spines. The lateral margins of the basal portion of the telson are minutely but distinctly serrated. The uropods, which are slender and do not appear to reach far beyond the telson, have the peduncle narrow and considerably elongated.

Genus *Dic.* Stebbing, 1910.

Dic tubulicauda (Calman). Pl. I., fig. 6.

1905. *Diastylis tubulicauda,* Calman. Fisheries, Ireland, Sci. Investigations, 1894, I. (1905), Cumacea, p. 46, Pl. V., figs. 82–86.

This species was obtained in a gathering collected at 1100 meters in Lat. 59°25 N., Long. 70°33 W., August 17, 1907, and is the only sample in which I have met with it. Perhaps the most obvious character by which this species may be distinguished is the somewhat peculiar form and structure of the telson, and particularly the apical portion of it. The telson is elongated, cylindrical, and not very stout ; its width is about the same throughout, and, instead of tapering at the distal end, it terminates somewhat abruptly in a kind of trifid apex. The uropods are long and slender, but do not reach much beyond the end of the telson. The length of the specimen represented by the drawing (fig. 6) is about 8 mm. Only one or two specimens were observed.

Diastylis tubulicauda was obtained by Dr. Calman in material collected 77 miles W.N.W. of Achil Head, County Mayo, Ireland, at a depth of 382 fathoms (fully 700 meters), but only one specimen was noticed.

Dr. Calman, in describing the species, remarks that "The characters of this peculiar form do not coincide with those of any of the admitted genera of *Diastylidæ*;" and the Rev. T. R. R. Stebbing, in describing a closely allied form for which he has established the genus *Dic.* and the family Dicidæ, alludes to Calman's species and says—"I venture to think that it will prove to be a species of the new genus here instituted."* As the "Goldseeker's" specimens appear to be identical with Calman's species, which in turn agrees so closely with the form described by Stebbing, I have ventured to place it in the genus instituted by that author.

DESCRIPTION OF A LARGE OSTRACOD.

Genus *Gigantocypris*, G. W. Müller, 1895.

Gigantocypris (?) *pellucida*, G. W. Müller. Plate II.

1895. *Gigantocypris pellucida*, G. W. Müller, Bull. Mus., Comp. Zoöl., Harvard, Vol. XXVII., No. 5, p. 164, Pl. 1,^ 6, 7, 11, fig. / 16, 22, 23; Pl. 2, fig. 11.

Shell subglobose, rather longer than broad when viewed from the side, but seen in front the width is slightly greater posteriorly. Antennal notch small and near the anterior end. Eyes large, contiguous, and of a brownish colour. The valves are open along the ventral aspect, and about half-way round the proximal end to a little beyond the antennal notch; round the distal end and along the entire dorsal aspect they are closely joined together and almost coalescent, their junction being indicated only by a faint inconspicuous line; they are also apparently unprovided with any hinge arrangement. The valves are chitonous, very thin, semi-transparent, and appear to be without any calcareous stiffening. The animal shows dimly through the shell, and the long vermiform appendages are distinctly seen. The surface of the shell, when viewed under a low power of the microscope, appears to be covered with very minute prickles. Length of the shell, about 15·5 mm. (fully half an inch); width, 14 mm.; thickness, about 12 mm.

The *antennules* are composed of seven joints; the first two are tolerably stout, but the others are slender. The first joint is rather longer than the second, the second and fourth are nearly equal in length, and both are longer than the one intermediate. The fifth joint is rather shorter than the preceding one, and the two end joints are small. Several elongated setæ, some of them ringed, spring from the end joints, but the other joints are only provided with a few short terminal bristles, as shown by the drawing (Pl. II., fig. 5). The formula shows approximately the proportional lengths of the different joints of the antennules:—

Number of the joints,	1	2	3	4	5	6	7
Proportional lengths,	23	15	10	13	11	4	3

The masticatory process on the basal joint of the mandibular foot is undivided, bluntly rounded at the end, and armed with a few short a/ tolerably stout apical spines; the second joint of the mandibular foot is considerably enlarged and provided with a stout appendage, slightly curved and spiniform, on its upper distal angle; the third joint is very short, but the fourth is elongated, stout, and somewhat gibbous at the proximal end, and considerably narrowed towards the distal extremity; the end joint is very small and bears two or three a/ moderately long and slender spical spines; the penultimate joint has its upper margin densely clothed with setæ (Pl. II., fig. 7).

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* Annals of the South African Museum, vol. vi., p. 416 (1910).

Maxillæ.—The first, second, and third pairs of maxillæ are all somewhat similar to the same appendages in *Cypridina mediterranea*, and differ from them only in some minor details. The third pair is provided with four not very clearly-defined lobes, and on the outside of these is a small sub-triangular lamina, with its distal margin boldly rounded and densely fringed with feathered setæ (Pl. II., fig. 10).

The post-abdomen is also similar to that of the species mentioned. Its armature consists of eleven spines; the apical one is of considerable length, while the others become gradually shorter; the margins are all fringed with denticles of a similar kind (Pl. II., fig. 12).

The Vermiform Appendages.—These, which are of great length, are rather slender; the *head* is wedge-shaped and pointed, and the edges of the lips of the jaw-like apex are fringed with minute spinules. These appendages are also furnished at the distal end, and especially near the apex, with numerous long slender bristles such as are usually found on these organs.

Habitat.—Collected by the "Goldseeker" in August 1910, in Lat. 58°43 N., Long. 9°6 W., between 90 and 95 miles W. by N. of the Butt of Lewis, Outer Hebrides, at a depth of about 1448 meters (over 780 fathoms). I have only seen one specimen.

Remarks.—Large Ostracods have been obtained at various times, usually in tolerably deep water, but there has apparently been no record of their occurrence hitherto off the West Coast of Scotland.

The genus *Gigantocypris* was instituted by Professor G. W. Müller in 1895 to include some large Ostracods collected by the U.S. Fish Commission steamer "Albatross" while carrying on dredging operations off the West Coast of Central America. Two species were described—*G. agassizii* and *G. pellucida*, and the specimen recorded here seems to agree fairly well with the latter. Dr. G. H. Fowler, in his account of the Ostracoda obtained from collections made by H.M.S. "Research" in the Bay of Biscay in 1900,* reports the occurrence of two examples of *G. pellucida*, one of which —a perfect specimen—measured about 13 mm. Both specimens were obtained at considerable depths. In recording these specimens Dr. Fowler remarks—"I regard it, however, as possible that *pellucida* is the penultimate stage of *agassizii*."

G. agassizii is apparently a much larger form than the other; Dr. Müller states that "Die Thiere erreichen eine Länge von 23 mm., bei eine Höhe von 19·5, und eine Breite von 18 mm."

Gigantocypris appears to have a wide distribution, for, besides the occurrences mentioned above, Professor Chun, in his account of the Valdivia Expedition, also records the capture of similar specimens in the Atlantic and Indian Oceans, and the Rev. T. R. R. Stebbing, in

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*Biscayan plankton collected during a cruise of H.M.S. "Research," 1900; Part XII. Ostracoda. *Trans. Linn. Soc. London*, Ser. 2, Zool., Vol. x., p. 257 (1909).

his report on South African Crustacea, describes other large specimens belonging to the related genus *Crossophorus*, G. S. Brady, which were dredged in deep water 67 and 73 miles S. by W. of St. Blaize, South Africa.* Though the shell of *Gigantocypris*, when compared with the shells of *Cypridinæ*, shows some curious differences in shape and structure, the structure of the animal itself exhibits a somewhat close relationship with that of species belonging to *Cypridina*, and especially to *Cypridina mediterranea*, Claus (*see* Pl. LV. of Brady and Norman's Monogr., Part II.).†

DESCRIPTION OF PLATES.

PLATE I.

Fig. 1. *Diastylis serricauda*, sp. n., female, side view.
,, 2. ,, ,, uropods and telson, front view.
,, 3. ,, ,, ,, ,, side ,,
,, 4. ,, ,, end of telson, more highly magnified.
,, 5. *Diastylopsis dubia*, Bonnier, uropod and telson.
,, 6. *Dic tubulicauda* (Calman), uropod and telson.

PLATE II.

Gigantocypris (?) *pellucida*, G. W. Müller.

Fig. 1. Shell, side view.
,, 2. ,, front view.
,, 3. Antennal notch, front view.
,, 4. Cross lines to show natural size.
,, 5. Antennule.
,, 6. Antenna.
,, 7. Mandibular foot.
,, 8. First maxilla.
,, 9. Second maxilla.
,, 10. Third maxilla.
,, 11. Vermiform appendage.
,, 12. Post abdomen.

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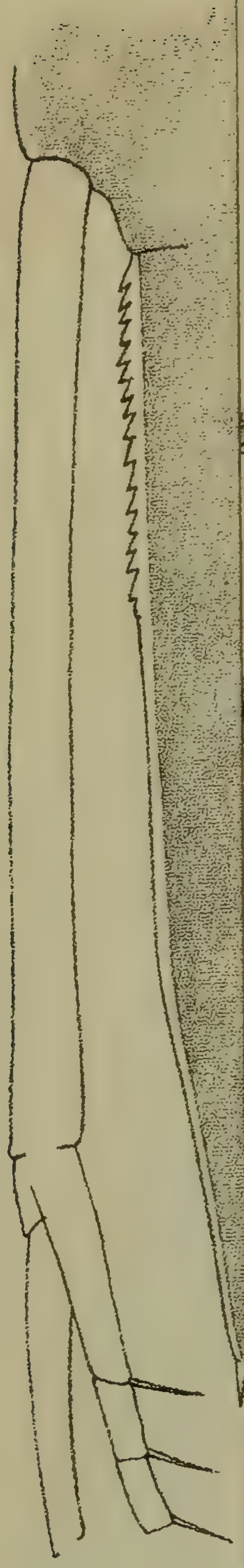
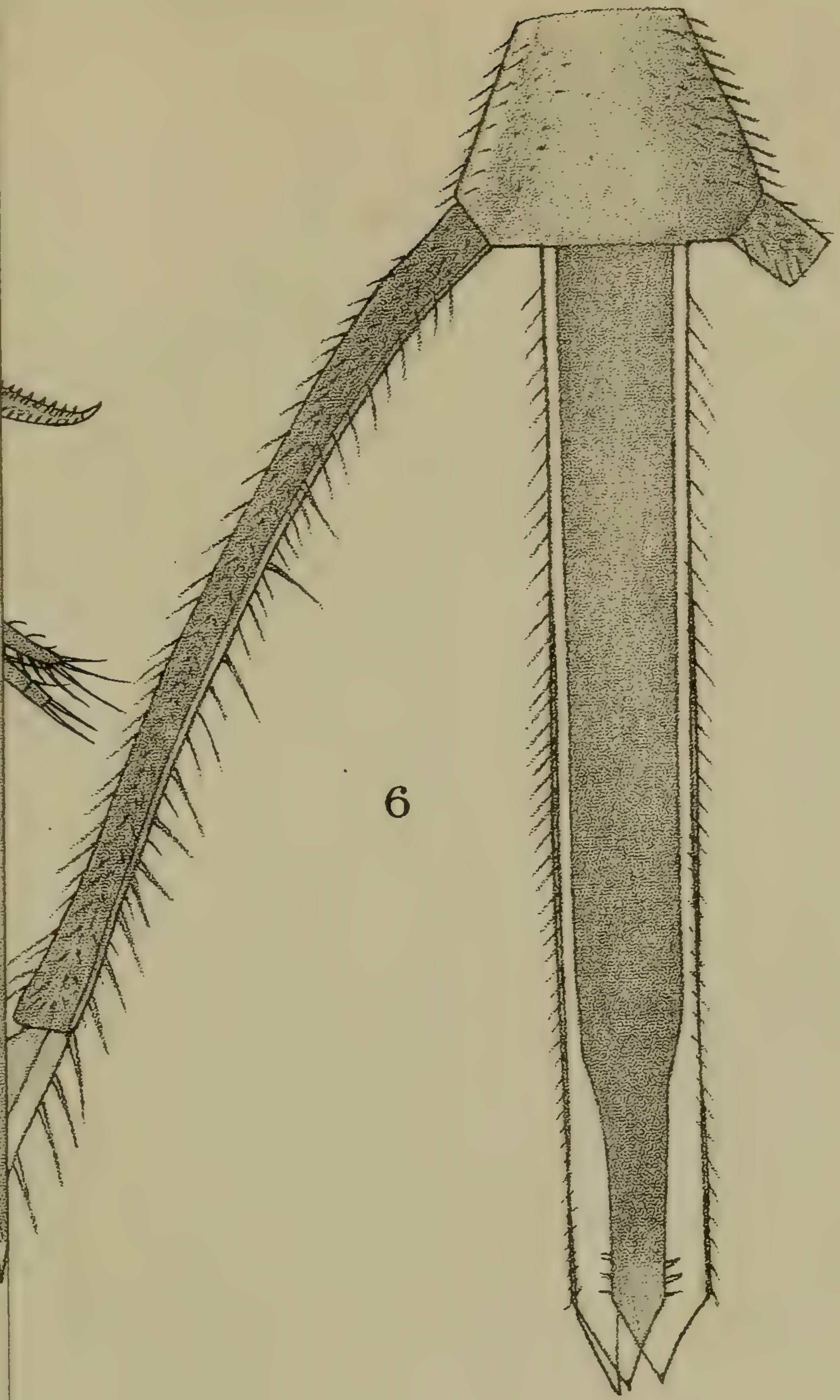
*Marine Investigations in South Africa—South African Crustacea, Part ii. (1902), p. 79, Pls. 15A and 16; also Annals of the South African Museum, vol. iv., Part iv. General Catalogue of Crustacea, p. 518 (1910).

†A Monograph of the Marine and Fresh-water Ostracoda of the North Atlantic and North-Western Europe, Part II., *Trans. R. Dub. Soc.*, vol. v. (Ser. II.), No. XII. (1896).

Plate I





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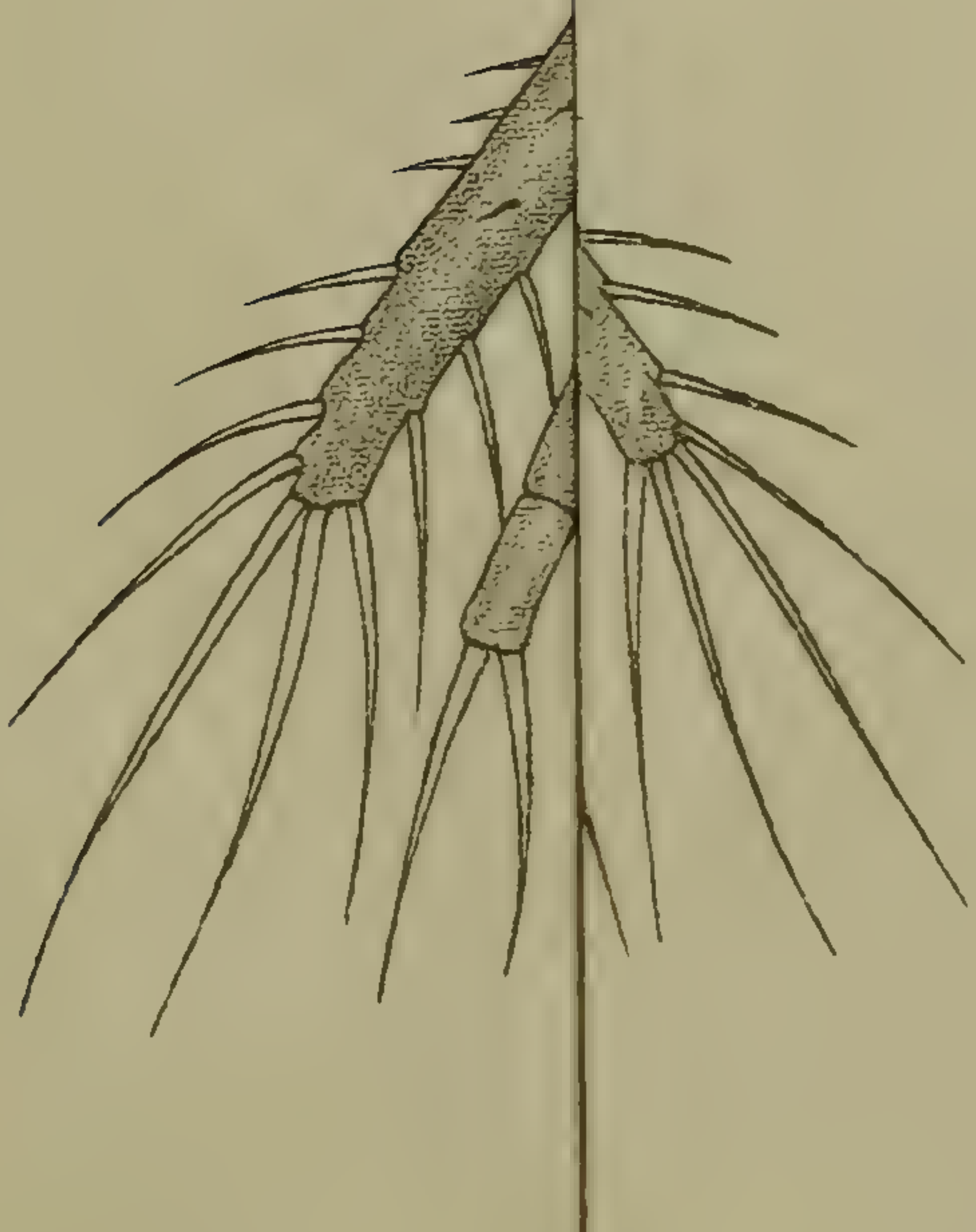

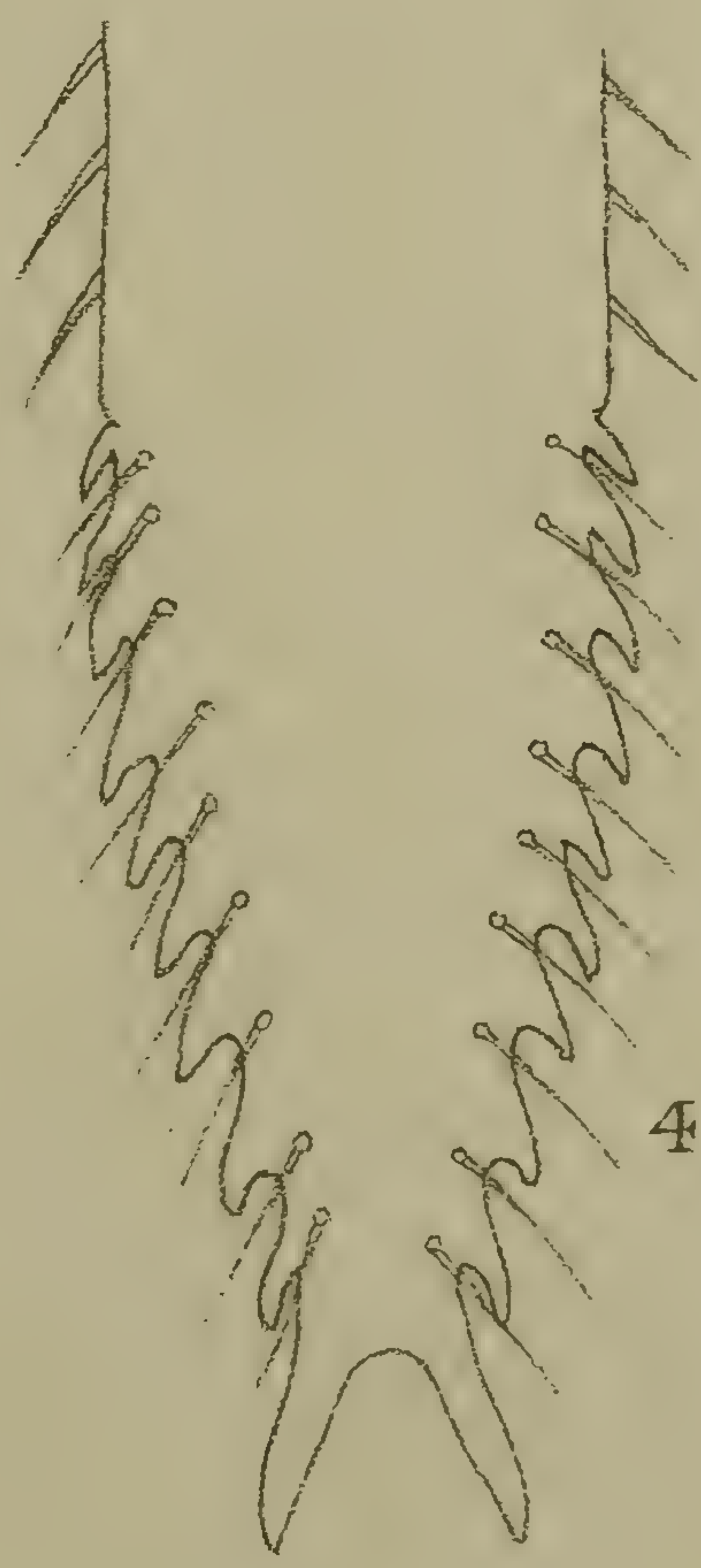

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Figs. 1-3 A.Scott

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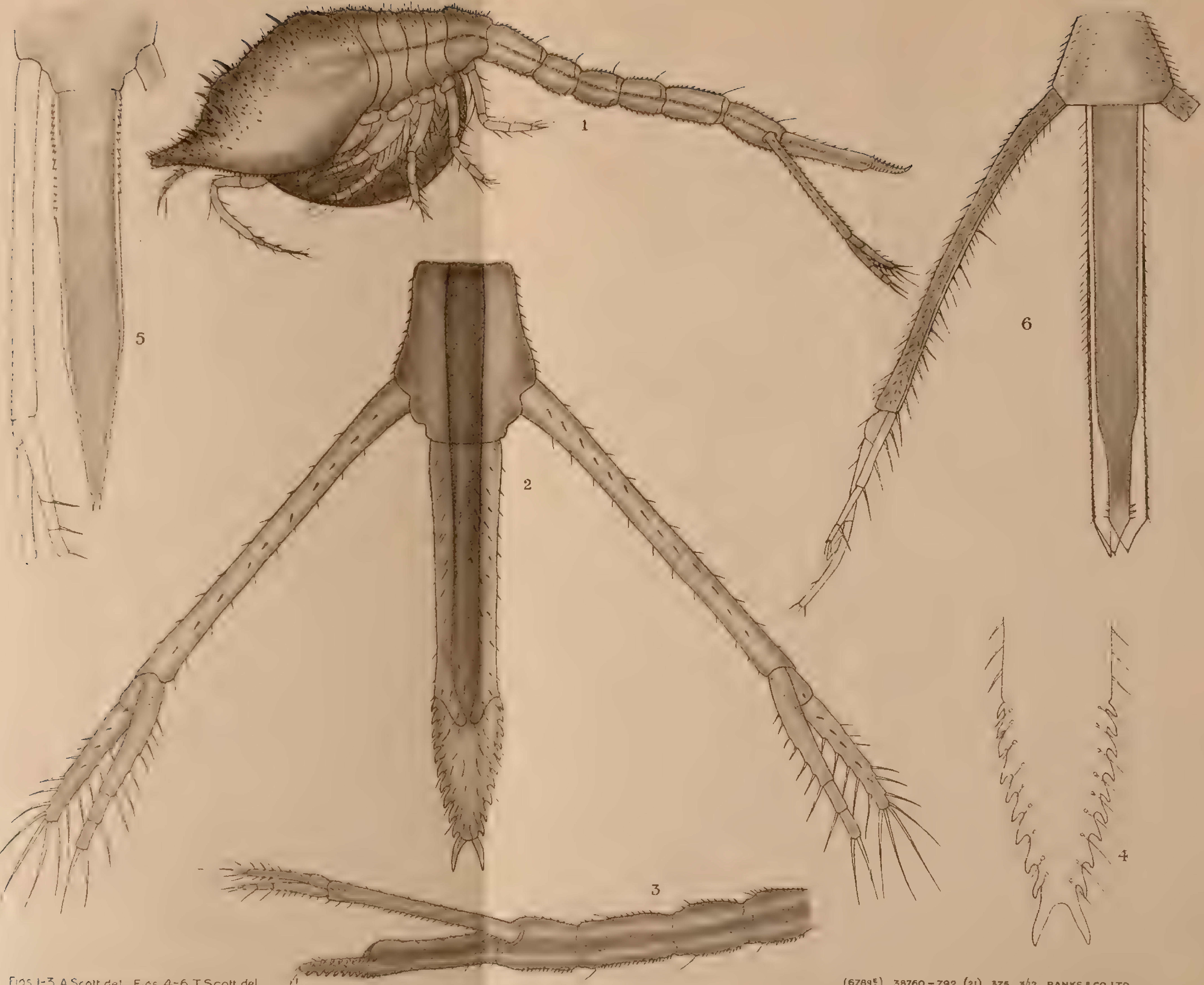
Plate I



Figs 1–3 A Scott del Figs 4–6 T Scott del.

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Plate II

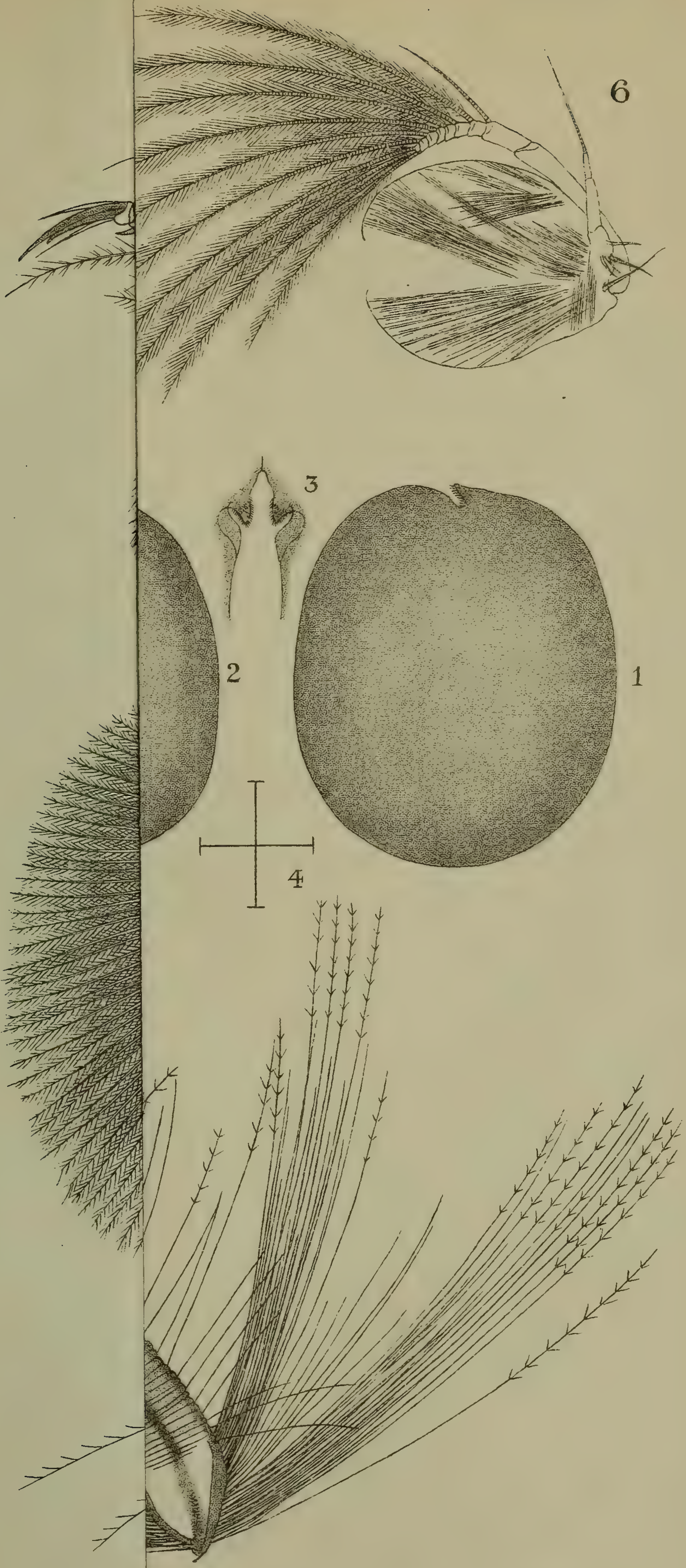

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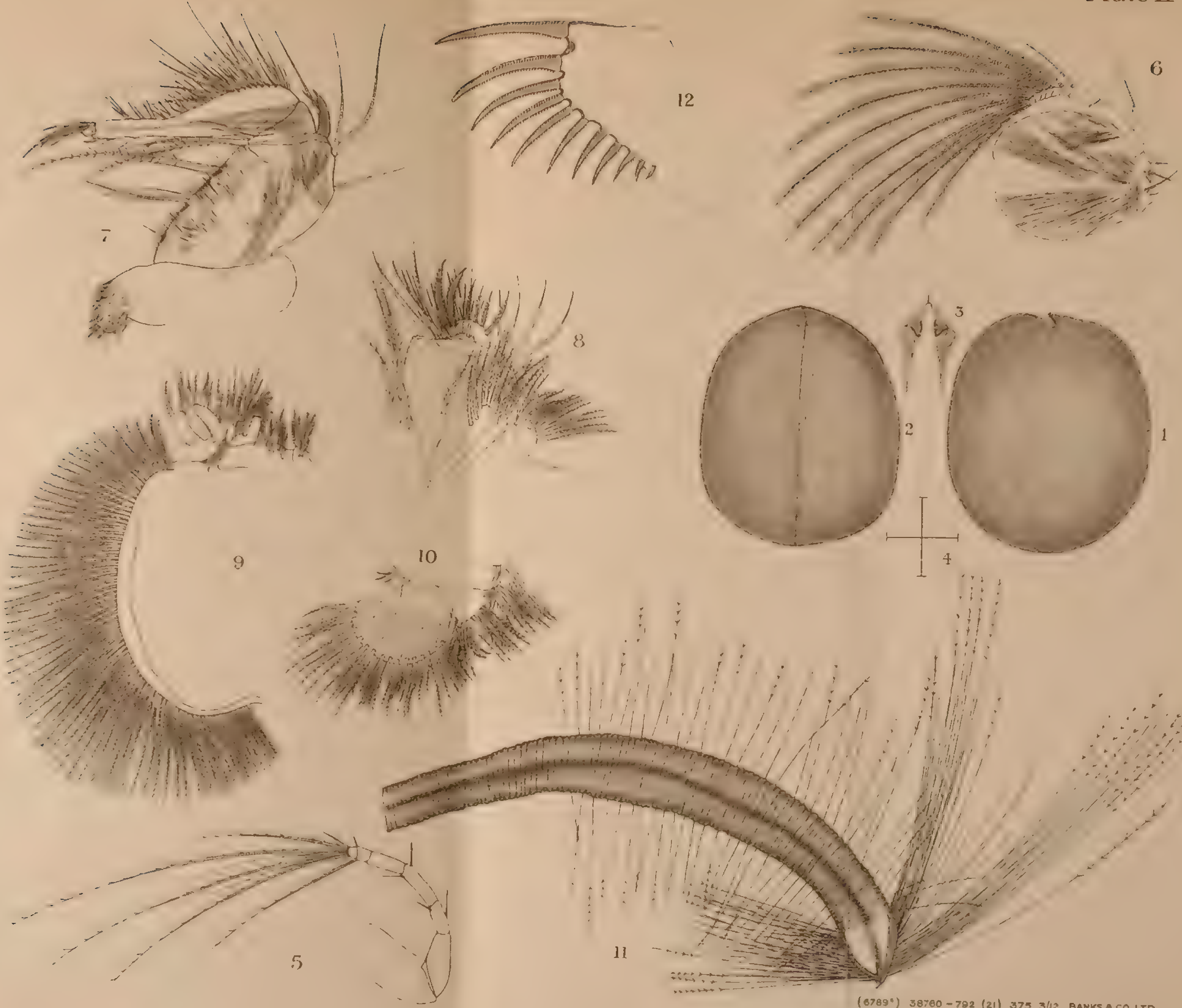
Plate II



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GIGANTOCYPRIS PELLUCIDA J. W. MÜLLER.

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